

**REMARKS**

The Applicants thank the Examiner for the thorough consideration given the present application. Claims 11 and 13 are cancelled herein without prejudice to or disclaimer of the subject matter therein. Claims 2-6 and 8 were previously cancelled. Claims 1, 7, and 9, 10, 12, and 14-21 are pending. Claims 1 and 7 are amended, and claims 14-21 are added. Claims 1 and 7 are independent. The Examiner is respectfully requested to reconsider the rejections in view of the amendments and remarks set forth herein.

**Examiner Interview**

If, during further examination of the present application, any further discussion with the Applicants' Representative would advance the prosecution of the present application, the Examiner is encouraged to contact Carl T. Thomsen, at 1-703-208-4030 (direct line) at his convenience.

**Claim Objection**

In response to the Examiner's objection, claims 11 and 13 have been cancelled. Accordingly, reconsideration and withdrawal of this objection are respectfully requested.

**Rejection Under 35 U.S.C. § 112, second paragraph**

Claims 1, 7, and 9-13 stand rejected under 35 U.S.C. § 112, second paragraph. This rejection is respectfully traversed.

In order to overcome this rejection, the Applicants have amended claims 1 and 7 to correct the typographical by replacing the words “atmospheric temperature” with the words “atmospheric pressure,” and by eliminating the alleged ambiguity.

The Applicants respectfully submit that claims 1 and 7, as amended herein, particularly point out and distinctly claim the subject matter which the Applicants regard as the invention. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

**Rejections Under 35 U.S.C. §103(a)**

Claims 1, 7, and 9-13 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Garcia (U.S. 5,842,579) in view of Mori et al. (U.S. 5,191,218).

This rejection is respectfully traversed.

**Arguments Regarding Independent Claims 1 and 7 as Amended**

While not conceding the appropriateness of the Examiner’s rejection, but merely to advance prosecution of the present application, each of **independent claims 1 and 7** has been amended to include *inter alia*

“a circular-shaped vacuum suction channel, ...

the work receiving openings being spaced apart from each other and arranged in a circular pattern,

each work receiving opening being disposed inwardly or outwardly in a radial direction relative to the vacuum suction channel,

each work receiving opening being connected to the vacuum suction channel through a minute sectional suction channel provided on the conveyor table,

each of the minute sectional suction channels has a longitudinal axis extending in the radial direction from the corresponding work receiving opening only to a point that is part way across a width of the circular-shaped vacuum suction channel, ...

wherein a jetting nozzle is disposed in a working discharge region to penetrate through the table base, for jetting the compressed air to the work receiving openings to discharge the work in each of the work receiving openings,

wherein the works are discharged smoothly and securely by the compressed air from the jetting nozzle, regardless of a suction power from the vacuum suction channel determined by the work load rate.”

Because the present invention provides “a jetting nozzle is disposed in a working discharge region to penetrate through the table base, for jetting the compressed air to the work receiving openings to discharge the work in each of the work receiving openings, wherein the works are discharged smoothly and securely by the compressed air from the jetting nozzle, regardless of a suction power from the vacuum suction channel determined by the work load rate,” the compressed air from the jetting nozzles can discharge the work smoothly and securely, regardless of the suction power from the vacuum channel determined by the work load rate.

The Applicants believe that no combination of Garcia and Mori et al. discloses the features as presently claimed.

### Difference A.

Figure 1 consists of two parts: (a) a plan view and (b) a cross-sectional view of a multi-layered substrate assembly.

(a) Plan view shows a rectangular substrate with a central square opening. The opening is defined by dashed lines. The outer boundary is labeled 2. The inner boundary of the opening is labeled 8. The thickness of the substrate is indicated by dimension lines 6 and 7. The width of the substrate is indicated by dimension line 5. The height of the substrate is indicated by dimension line 11. The opening is divided into four quadrants by dashed lines, with each quadrant containing a small square feature.

(b) Cross-sectional view shows the substrate assembly. It consists of three layers: a top layer (2), a middle layer (3), and a bottom layer (4). The top layer (2) has a central square opening (8). The middle layer (3) contains a central square opening (6) and a central square opening (7). The bottom layer (4) contains a central square opening (5). The total thickness of the assembly is indicated by dimension line 9. The width of the substrate is indicated by dimension line 12. The height of the substrate is indicated by dimension line W. The opening is divided into four quadrants by dashed lines, with each quadrant containing a small square feature.

FIG. 4

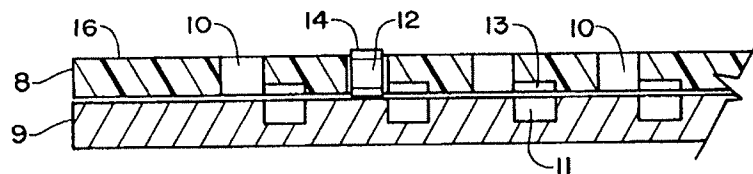


FIGURE 6

the Garcia document clearly does not teach or suggest

“each of the minute sectional suction channels has a longitudinal axis extending in the radial direction from the corresponding work receiving opening only to a point that is part way across a width of the circular-shaped vacuum suction channel,” as presently claimed.

**Difference B.**

In addition, the Examiner concedes that the Garcia reference fails to disclose

“the negative pressure sensor detecting the vacuum level of the work receiving openings of the conveyor table, and

the adjustment part adjusting the vacuum level of the work receiving openings,

wherein the vacuum level adjustment mechanism includes a compressed air generation source for generating a compressed air,

wherein the adjustment part is adapted to jet out the compressed air from the compressed air generation source to the vacuum leak generation part based on the signal from the negative pressure sensor, and

wherein the adjustment part jets out the compressed air based on the signal from the negative pressure sensor when the vacuum level rises above a maximum negative pressure, and stops the compressed air when the vacuum level falls below a minimum negative pressure,

the maximum negative pressure being determined by an increased work load rate, and the minimum negative pressure being determined by a decreased work load rate,” as presently claimed.

The Examiner then asserts that Mori et al. makes up for the deficiency of Garcia. The Applicants respectfully disagree.

**Regarding the Mori et al. Reference**

**Difference A.**

FIGS. 6 and 7 of The Mori et al. document merely disclose a vacuum chucking surface **106** for chucking a single wafer **105** on the surface thereof in a fixed position.

This is to say, Mori et al. fail to teach or suggest

“a conveyor table rotatably mounted on the table base, ...

a plurality of work receiving openings penetrating through the table base for receiving works therein, the work receiving openings being spaced apart from each other and arranged in a circular pattern, ...

each of the minute sectional suction channels having a longitudinal axis extending in the radial direction from the corresponding work receiving opening only to a point that is part way across a width of the circular-shaped vacuum suction channel”

**Difference B.**

The Examiner has pointed out that Mori et al. disclose an adjustment part (**115b**).

However, Mori et al. merely disclose a single wafer **105** held in a fixed position against the flat surface of chucking surface **106** by a vacuum provided via circular grooves **106<sub>2</sub>**, wherein the entire groove is exposed to the single wafer **105**.

Mori et al. column 9, lines 35 to 38 merely disclose “first and second gas adjusting valve 115a or 115b, for detecting the inside pressure of a small space between the bottom face (clearance) as defined as the bottom face of the wafer **105** and the chucking surface **106<sub>1</sub>**...” See also, Mori et al. FIG. 6 and 7, which clearly illustrate the flat bottom surface of wafer **105** and the chucking surface **106<sub>1</sub>**.

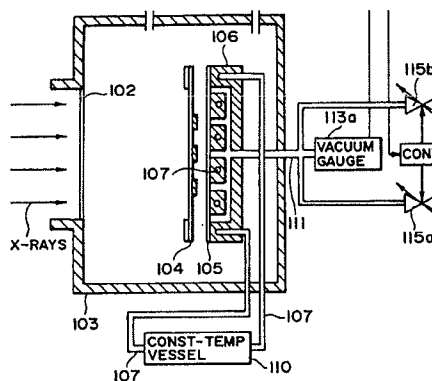


FIG. 6

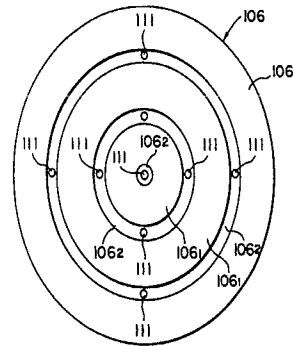


FIG. 7

That is to say, Mori et al. do not teach at all that the vacuum level of the work receiving openings can be securely stabilized by the operation of the adjustment part, regardless of the work load rate of the work receiving openings, or the increased work load rate or the decreased work load rate, as presently claimed.

Furthermore, Mori et al. disclose a vacuum chuck for chucking wafers one at a time, and therefore Mori et al. have nothing to do with the features of the present invention, or any work load rate of the work receiving openings.

### **Summary**

Since the Garcia and Mori et al. references each discloses differences A and B above, the combination of Garcia and Mori et al. cannot teach or suggest the subject matter set forth in each of **independent claims 1 and 7**, as amended herein.

At least for the reasons explained above, the Applicants respectfully submit that the combination of elements as set forth in each of **independent claims 1 and 7** is not disclosed or made obvious by the prior art of record, including Garcia (U.S. 2001/0008061) and Mori et al. (U.S. 5,191,218).

Therefore, **independent claims 1 and 7** are in condition for allowance.

### **Dependent Claims**

The Examiner will note that dependent claims 11 and 13 have been cancelled, and dependent claims 14-21 have been added to set forth additional novel features of the invention.

All dependent claims are in condition for allowance due to their dependency from allowable independent claims, or due to the additional novel features set forth therein.

All pending claims are now in condition for allowance.



Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. §103(a) are respectfully requested.

**CONCLUSION**

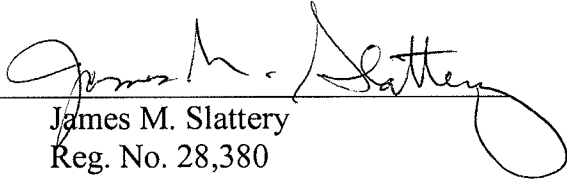
All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. It is believed that a full and complete response has been made to the outstanding Office Action, and that the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, he is invited to telephone Carl T. Thomsen (Reg. No. 50,786) at (703) 208-4030(direct line).

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17, particularly extension of time fees.

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Respectfully submitted,

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